TRAVAUX DU MUSÉUM NATIONAL D'HISTOIRE NATURELLE «GRIGORE ANTIPA»

THE JOURNAL OF "GRIGORE ANTIPA" NATIONAL MUSEUM OF NATURAL HISTORY

Travaux du Muséum National d'Histoire Naturelle "Grigore Antipa" 65 (1): 55–61 (2022)
doi: 10.3897/travaux.65.e83600

RESEARCH ARTICLE

Eretes sticticus (Coleoptera, Dytiscidae) - A new record for the Romanian fauna, and new data regarding the distribution of two rare species - *Acinopus ammophilus* (Coleoptera, Carabidae) and *Sphenoptera* (*Chilostetha*) *laportei* (Coleoptera, Buprestidae) in Dobrogea (Romania)

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Received 10 March 2022 | Accepted 18 April 2022 | Published 30 June 2022

Citation: Nitzu E (2022) *Eretes sticticus* (Coleoptera, Dytiscidae) - A new record for the Romanian fauna, and new data regarding the distribution of two rare species - *Acinopus ammophilus* (Coleoptera, Carabidae) and *Sphenoptera* (*Chilostetha*) *laportei* (Coleoptera, Buprestidae) in Dobrogea (Romania). Travaux du Muséum National d'Histoire Naturelle "Grigore Antipa" 65(1): 55–61. https://doi.org/10.3897/travaux.64.e83600

Abstract

The presence of *Eretes sticticus* in the Romanian fauna, unconfirmed until now, is for the first time accurately recorded and documented with photographs in this article. The presence of other two very rare and little-known species: *Acinopus* (*Osimus*) *ammophilus* and *Sphenoptera* (*Chilostetha*) *laportei* are reconfirmed for the Romanian fauna, in a different geographical area (North Dobrogea), other than that they were previously recorded last century.

Keywords

Eeretes sticticus, *Acinopus ammophilus*, *Sphenoptera laportei*, new records, Romania, climate change.

Introduction.

The distribution range of *Eretes sticticus* (Linnaeus, 1767) was modified and disputed many times. Through time, the distribution of the species *Eretes sticticus* was a

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subject of reinterpretations due to misidentification of some very similar species in morphology- "sibling species" (*lat. species geminatae*). For example, the distribution of *E.sticticus* was considered a "cosmopolitan–pan tropical" by Franciscolo (1979), while Miller (2002) commented for the distribution of this species: "*A species that has a particularly unusual distribution for a dytiscid. It occurs in the Old World from the Middle East throughout Africa north to Cyprus, including the Cape Verde and Canary Islands, and in the New World from Peru and the Galapagos Islands to the Virgin Islands north to California, Arizona and Texas, USA*". For *Eretes sticticus* Nilsson (2003) presents a distribution circumscribed from the mild to warm climate areas surrounding the Mediterranean zone, Asia and oriental Africa (considering *Eretes griseus* synonym of *Eretes sticticus*).

In present, due to the systematic revision of genus *Eretes* carried out by Miller (2002), four currently species are recognised: *Eretes australis* (Erichson, 1842) from Australia, *E. explicitus* Miller, 2002 from central and southwestern North America, *E. griseus* (Fabricius, 1781) widely distributed in tropical and subtropical areas of the Old World and *E. sticticus* (Linnaeus, 1767) with a distribution confirmed in Africa, the Mediterranean, southwestern and Central Asia, and Central America (cf. Miller 2002). Recently, the presence of *E. sticticus* was spotted in Hungary, Czech Republic and Slovakia (Hájek et al. 2014; Hajek 2017).

Regarding the presence of *Eretes sticticus* in the Romanian fauna, this species was mentioned by Csiki (1946) for "Boksánbánya" - meaning Bocșa – the Romanian genuine name of locality, situated in the Caraș-Severin County, Romania. This old record was not taken into consideration by other authors who referred to the distribution of species in their subsequent studies (Franciscolo 1979; Nilsson 2003). Hájek et al (2014) published an article in which the species *E. sticticus* was recorded in Hungarian fauna for the first time. In the same paper, the authors attested the presence of *Eretes griseus* in one site from Romania-in Bocșa – based on the old specimens preserved in Hungarian Natural History Museum, Budapest. Citing from the mentioned article: "*Romania. 2 females 'Sűd Ungarn, Német Bogsan [= currently Romania, Caras-Severin Prov., Bocșa, ca. 45.3733N, 21.7092E], v.1907 / E. Merkl, Neu Bogsán' (NMPC)*". Hájek et al (2014) omitted to mention, or comment, the former record of Csiki (1946) for *Eretes* in Bocșa (=Boksánbánya/ Bogsan), considering that only *E. griseus* is present in the Romanian fauna. However, *E. griseus* has been synonymised with *E. sticticus* for more than a hundred years, until the revision of the genus (Miller, 2002). Now, after the recent recordings of *E. sticticus* in Hungary, Slovakia (Hajek et al. 2014) and in the Czech Republic (Hájek 2017), in this article we complete the information about the presence of *Eretes sticticus* in Europe, arguing the presence of this species in Romania.

Acinopus (*Osimus*) *ammophilus* Dejean, 1829 is a species with Turanico-European range (Albania, Armenia, Bulgaria, Greece, Georgia, Hungary, Italy, Macedonia, Moldova, Romania, South of Russia, Turkey, Ukraine, Serbia) (Magistretti 1965; Hůrka 2003) and Croatia (Guéorguiev 2011). It is a very rare species in the Romanian fauna, reported in the past century only in Southern Dobrogea – Bugeac and Băneasa

(Săvulescu 1959), Iortmac and Esechioi (Săvulescu and Popescu-Gorj 1964; Negru and Roşca, 1967). After a long period of time form the mentioned recordings, we reconfirm the presence of this species in Dobrogea, and even more-for northern Dobrogea (including the Măcin Mountains), where this species was not recorded up to present.

Sphenoptera (*Chilostetha*) *laportei* Saunders, 1871 is a species known from the Meridional Russia, Czech Republic, Slovakia, Bulgaria, Hungary, Austria, Italy, France. In Romania, it was cited by Schaefer (1949), without any other precisely location data, and at Vadu (Constanța County -South Dobrogea) (06.25.2011-leg. Manci) (Panin et al. 2015). Erroneously reported as "*Absent" in Romania by* Miguel A. Alonso-Zarazaga et al.-in *"Fauna Europaea" database* (*https://fauna-eu.org/ accessesed at February, 02, 2022*), here it is reconfirmed for the Romanian fauna.

Material and methods.

The material for the present study has been collected in the aestival period of 2021 from three different sites: Cândești (the Buzau County) – a site located in the Curvature Carpathians, and from two sites located in North Dobrogea (Troesmis and the Măcin Mountains). *Eretes sticticus* was collected at artificial light. *Acinopus* (*Osimus*) *ammophilus* (Coleoptera, Carabidae) and *Sphenoptera* (*Chilostetha*) *laportei* (Coleoptera, Buprestidae) were collected using Barber traps with acetic and butyric attractants, placed in field during five days. The specimens were preserved in ethanol 75% and examined at a "Discovery V8" Zeiss stereoscope with 8 to 85X magnification power, provided with an Olympus photo-camera. The specimens were glued on standard tags or stored in ethanol. From the *Eretes sticticus* specimen, the female genitalia was extracted for detailed studies and mounted in a *Sindeticon* transparent gel on standard transparent tag. The examined specimens (*Eretes sticticus* and *Sphenoptera laportei*) are preserved in the Zoological Collection of "Grigore Antipa" National Museum of Natural History of Bucharest and *Acinopus* (*Osimus*) *amophylus* in the author's collection.

Results and discussions

Eretes sticticus (Linnaeus, 1767)

(Figs 1–3)

Material examined: 1 ♀; August,16, 2021, Cândești (Buzău County, Romania). Coordinates: 45^{0}14'29.95" N; 26^{0}41'53.88" E. Leg. et det. E. Nitzu.

Collected at light trap at 11 PM. The light trap was placed at the border of drainage channel, surrounded with reeds; the temperature was about 25^{0}C, no wind.

Description: Body length: 16 mm; habitus (Fig. 1) – according to the described variation in extent of black maculation pattern observed by Miller (2002) for *E. sticticus*. The elytral apex protruded, sharply pointed (versus less pointed in *E. griseus*) (Fig. 2). The apices of gonocoxae broadly rounded, apical emargination of gonocoxae of female genitalia relatively narrow - according to diagnosis key following Miller (2002) (Fig. 3).

In conclusion, there are two species in the Romanian fauna: *Eretes griseus*-cited for Bocșa (Caraș-Severin County) (Hájek et al. 2014) and *Eretes sticticus* - reported in this article for Cândești (Buzău County). The recent spread of this vagile and thermophilic species, from the Mediterranean to central and eastern Europe, could be interpreted as a consequence of the recent climate change (Faragó et al. 2010; Hájek et al. 2014).

Figure 1. *Eretes sticticus*. Habitus of the female from Candesti (Romania) (L= 16 mm).

Figure 2. *Eretes sticticus*. The elytral apex of the female collected at Candesti.

Figure 3. *Eretes sticticus*. Female genitalia (Candesti, Romania).

Acinopus (Osimus) ammophilus Dejean, 1829

Material examined: 2 ♂ and 1 ♀–July, 15, 2021, The ancient Fortress Troesmis (North Dobrogea, Romania); coordinates: 45⁰08'39.25" N; 28⁰11'53.22" E and 45⁰08'39" N; 28⁰11'41.40" E.; 1 ♂ (exoskeleton)–July, 16, 2021, Măcin Mt. (Țuțuiatu); coordinates: 45⁰12'31.2" N; 28⁰15'38.3" E., all, Leg. et det. E. Nitzu. First mention for North Dobrogea

Collected at Barber traps with attractant based on acetic fermentation.

A. (O.) ammophilus is a stepicolous, xero-thermophilous species (on sandy soils). It is a graminivorous, monophagous species (it feeds on seeds of *Medicago minima*) (Maccapani et al. 2018).

Sphenoptera (Chilostetha) laportei Saunders, 1871

Material examined: 1 female–July, 15, 2021, The ancient Fortress Troesmis (North Dobrogea, Romania); coordinates: 45⁰08'32" N; 28⁰11'41.40"E. First mention for North Dobrogea.

Collected at Barber traps with attractant based on butyric fermentation.

S. (C.) laportei is a xero-thermophilous species, developing on *Dianthus* species (*D. armeria, D. attenuates, D. carthusianorum, D. caryophyllus, D. ciliates, D. granaticus*) (Panin et al., 2015).

Acknowledgments

I would like to express my thanks to Dr. Costică Adam, Dr. Melania San, Dr. Ionuț Popa, Biol. Andreea Drăghici and Dumitru Stan for their support of our joint investigation into wildlife and to the two reviewers for their valuable comments.

References:

Csiki E (1946) Die Käferfauna des Karpaten-Beckens. I Band, Allgemeiner Teil und Caraboidea, Budapest, 798 pp.

Faragó T, Lang I and Csete L (Eds) (2010) Climate Change and Hungary: Mitigating the Hazard and Preparing for the Impacts (the "Vahava" Report), Budapest: Hungarian Academy of Sciences.

Franciscolo ME (1979) Fauna D'Italia, Coleoptera. Haliplidae, Hygrobiidae, Gyrinidae, Dytiscidae. Ed. Calderini, Bologna, 804 pp.

Guéorguiev B (2011) New and interesting records of Carabid Beetles from South-East Europe, South-West and Central Asia, with taxonomic notes on Pterostichini and Zabrini (Coleoptera, Carabidae). Linzer Biologische Beiträge 43(1): 501–547.

Hájek J (2017) The arrival of the diving beetles *Eretes sticticus* (Coleoptera: Dytiscidae) in the Czech Republic. Klapalekiana 53: 279–282.

Hájek J, Hendrich L, Vyhnálek V and Csabai Z (2014) *Eretes* diving beetles (Coleoptera: Dytiscidae) in Central Europe witnesses of climate change? Aquatic Insects 36(*3–4*): 267–271.

Hůrka K (2003) Coleoptera, Carabidae, Harpalini: In: Löbl I, Smetana A (Eds) Catalogue of Palaearctic Coleoptera. Volume 1. Archostemata-Myxophaga, Adephaga. Apollo Books, Stenstrup, 819 pp.

Maccapani D, Mazzotti S, Fabbri R, Contarini E (2018) La riscoperta dell'Acinopo delle sabbie *Acinopus* (*Osimus*) *ammophilus* Dejean, 1829 (Coleoptera, Carabidae) nel Bosco della Mesola (Delta del Po, Ferrara). Quaderni del Museo Civico di Storia Naturale Ferrara 6: 71–74.

Magistretti M (1965) Coleoptera. Cicindelidae, Carabidae. Catalogo topografico. Fauna d'Italia, 8. Calderini, Bologna, 512 pp.

Miller KB (2002) Revision of the Genus *Eretes* Laporte, 1833 (Coleoptera: Dytiscidae). Aquatic Insects 24(4): 247–272

Negru Şt, Roşca A (1967) Ord. Coleoptera. In: L'entomofaune de forêts du sud de la Dobrudja. Travaux du Muséum d'Histoire Naturelle „Grigore Antipa" 7: 119–145.

Nilsson AN (2003) Coleoptera, Dytiscidae: In Löbl I, Smetana A (Eds) Catalogue of Palaearctic Coleoptera. Volume 1. Archostemata-Myxophaga, Adephaga. Apollo Books, Stenstrup, 819 pp.

Panin S, Săvulescu N, Ruicănescu A (2015) Fauna României, Insecta, Ord. Coleoptera, Fam. Buprestidae, Vol. X., Fasc. 7. Editura Academiei Române, București, 388 p.

Săvulescu N (1959) Contributions à l'étude de la faune des Coléoptères du Sud-Ouest de la Dobrogea. Lucrările Sesiunii Științifice ale Stațiunii Zoologice Marine „Prof. Ioan Borcea": 503–510.

Săvulescu N, Popescu-Gorj A (1964) Pădurile din Sud-Vestul Dobrogii, monumente puțin cunoscute ale naturii. Ocrotirea Naturii, 8(2): 257–276.

Schaefer L (1949) Les Buprestides de France. Tableaux analytiques des Coléoptères de la faune franco-rhénane. Miscelanea Entomologica, supplement, Paris, 511 pp.

Zarazaga MAA, Vit S, Bily S, Kuban V. Ord. Coleoptera, Fam. Buprestidae. In: Fauna Europaea Database (*http://fauna-eu.org/ accessesed at February, 02, 2022*). Composed link: https://fauna-eu.org/cdm_dataportal/taxon/b080f66a-379f-4283-9cf6-b12459942e32